IN THE CLAIMS:

Please CANCEL claims 14, 15 and 17 without prejudice to or disclaimer of the recited subject matter.

Please AMEND claims 1-13 and 16, and ADD new claims 18-22, as follows. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

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1. (Currently Amended) A scanning exposure apparatus comprising:

a master stage for scanning a master;

a substrate stage for scanning a ~~substrate,~~ substrate;

transfer means for supplying/recovering the substrate to/from said substrate ~~stage,~~ ~~and~~ stage;

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positioning means for relatively positioning the substrate and the ~~master,~~ master; and

scanning velocity determination means for determining a scanning velocity so as to maximize the number of substrates that can be exposed per unit time.

2. (Currently Amended) The apparatus according to claim 1, ~~characterized in that~~ wherein said scanning velocity determining means determines, as a scanning velocity in an actual exposure operation, a lowest one of

a maximum scanning velocity determined from apparatus performance: Vmax,

a scanning velocity determined from an exposure illuminance and a required

exposure amount: Vd, and

a scanning velocity at which the number of substrates that can be processed per unit time is maximized, which is determined from the transfer pattern size, a layout of the transfer pattern on the substrate, said transfer means, said master scanning means, said substrate stage scanning means, and said position means: Vt.

3. (Currently Amended) The apparatus according to claim 1, ~~characterized in that~~ wherein said light source is a light source for emitting pulsed light, and said scanning velocity determining means determines, as a scanning velocity in an actual exposure operation, a lowest one of

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a maximum scanning velocity determined from apparatus performance: Vmax,

a scanning velocity determined from an exposure illuminance and a required exposure amount: Vd,

a scanning velocity determined from the minimum number of pulses which is required for integration to ensure a uniform exposure amount: Vp, and

a scanning velocity at which the number of substrates that can be processed per unit time is maximized, which is determined from the transfer pattern size, a layout of the transfer pattern on the substrate, said transfer means, said master scanning means, said substrate stage scanning means, and said positioning means: Vt.

4. (Currently Amended) The apparatus according to claim 3, ~~characterized in that~~ wherein the scanning velocity Vp satisfies

$$VP = Ws/Pmin \times fmax$$

where Ws is a width of an illumination area, on the substrate in a ~~non-scanning~~ scanning direction, which illuminates part of the transfer pattern, fmax is a maximum frequency of pulsed light emitted from said light source, and Pmin is the minimum number of pulses required for integration to ensure a uniform exposure amount on the substrate.

5. (Currently Amended) The apparatus according to claim 2, ~~characterized in that~~ wherein the scanning velocity Vd satisifes

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$$Vd = Imax/D \times Ws$$

where Imax is a maximum exposure illuminance, and D is a required exposure amount determined by a photosensitive material.

6. (Currently Amended) The apparatus according to claim 2, ~~characterized in that~~ wherein the scanning velocity Vt satisfies

$$Vscan.\min = \sqrt{\{L \times \alpha accel \times \alpha decel / (\alpha accel + \alpha decel)\}}$$

$$Vtscan = g(Vscan.min)$$

where αaccel is an average acceleration with which an increase in scanning velocity from 0 to Wt is achieved, αdecel is an average acceleration with which a decrease in scanning velocity from Vt to 0 is achieved, L is a length on the substrate which is scanned at a constant velocity in one scanning operation, and g() is an arbitrary function.

7. (Currently Amended) The apparatus according to claim 2, ~~characterized in that~~ wherein the scanning velocity Vt is calculated by simulation to maximize the number of substrates that can be processed per unit time on the basis of the transfer pattern size, a layout of the transfer pattern on the substrate, and conditions in said master scanning means, said substrate stage scanning means, said transfer means, and said positioning means.

8. (Currently Amended) The apparatus according to claim 2, ~~characterized in that~~ wherein the scanning velocity Vt is changed for each transfer pattern in accordance with the transfer pattern size and the layout of the transfer pattern on the substrate.

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9. (Currently Amended) The apparatus according to claim 8, ~~characterized in that~~ wherein the scanning velocity Vt changes in accordance with a length that is scanned at a constant velocity for each shot area in one scanning operation.

10. (Currently Amended) A device manufacturing method of manufacturing a device, ~~characterized by~~ said method comprising:

the step of coating a substrate with a resist;

the step of drawing a pattern on the substrate by using an exposure apparatus; and

the step of developing the substrate,

the exposure apparatus including

a master stage for scanning a master,

a substrate stage for scanning a substrate,

transfer means for supplying/recovering the substrate to/from the substrate stage, ~~and~~

position means for relatively positioning the substrate and the master, and

scanning velocity determination means for determining a scanning velocity so as to maximize the number of substrates that can be exposed per unit time.

11. (Currently Amended) A semiconductor device manufacturing method ~~characterized by~~ comprising:

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the step of installing manufacturing apparatuses for performing various processes, including an exposure apparatus, in a semiconductor manufacturing factory; and

the step of manufacturing a semiconductor device by performing a plurality of processes using the manufacturing apparatuses,

the exposure apparatus including

a master stage for scanning a master;

a substrate stage for scanning a substrate,

transfer means for supplying/recovering the substrate to/from the substrate stage, ~~and~~

positioning means for relatively positioning the substrate and the master, and

scanning velocity determination means for determining a scanning velocity so as to maximize the number of substrates that can be exposed per unit time.

12. (Currently Amended) The method according to claim 11, ~~characterized by~~ further comprising:

the step of connecting a local area network to the manufacturing apparatuses; and

the step of performing data communication of information about at least one of the manufacturing apparatuses between the local area network and an external network outside the semiconductor manufacturing apparatuses.

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13. (Currently Amended) The method according to claim 12, ~~characterized in that~~ further comprising performing at least one of (i) accessing a database provided by a vendor or user of the exposure apparatus ~~is accessed~~ via the external network to obtain maintenance information of the manufacturing apparatus by data communication, ~~or~~ and (ii) performing production management ~~is performed~~ by data communication between the semiconductor manufacturing factory and another semiconductor manufacturing factory via the external network.

14. (Cancelled)

15. (Cancelled)

16. (Original) The apparatus according to claim 1, ~~characterized in that the apparatus further comprises~~ further comprising a display, a network interface, and a computer for executing network software, ~~and~~ wherein said apparatus performs data communication of maintenance information of the apparatus via a computer network.

17. (Cancelled)

18. (New) A scanning exposure apparatus for sequentially transferring a pattern on a master to each shot area on a substrate through a projection optical system by synchronously scanning the master and the substrate for the projection optical system, said apparatus comprising:

a stage for scanning the master; and

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scanning velocity determination means for determining a scanning velocity on the basis of a length of the pattern in a scanning direction.

19. (New) A scanning exposure apparatus for sequentially transferring a pattern on a master to each shot area on a substrate through a projection optical system by synchronously scanning the master and the substrate for the projection optical system, said apparatus comprising:

a stage for scanning the master; and

scanning velocity determination means for determining a scanning velocity on the basis of a length on the shot area which is scanned at a constant velocity.

20. (New) The apparatus according to claim 19, wherein the scanning velocity may be changed for each shot area.

21. (New) A scanning exposure apparatus for sequentially transferring a pattern on a master to each shot area on a substrate through a projection optical system by synchronously scanning the master and the substrate for the projection optical system, said apparatus comprising:

a stage for scanning the master; and

a controller for controlling scanning of the stage at a scanning velocity so as to maximize the number of substrates that can be exposed per unit time,

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wherein the scanning velocity for controlling scanning of the stage by said controller is determined from a plurality of velocities including a velocity so as to maximize a time period from a start of scanning of a shot area to an end of scanning.

22. (New) A scanning exposure apparatus for sequentially transferring a pattern on a master to each shot area on a substrate through a projection optical system by synchronously scanning the master and the substrate for the projection optical system, said apparatus comprising:

a stage for scanning the master; and

scanning velocity determination means for determining a scanning velocity so as to maximize the number of shots that can be exposed per unit time,

wherein said scanning velocity determination means determines, as a scanning velocity in an actual exposure operation, a lowest one of

(i) a maximum scanning velocity determined from apparatus performance: Vmax,

(ii) a scanning velocity determined from an exposure illuminance and a required

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exposure amount: Vd, and

(iii) a scanning velocity at which the number of shots that can be processed per unit time is maximized, which is determined from the shot size: Vt.